SECTION 406
ROAD MIX BITUMINOUS PAVEMENT

406.01 DESCRIPTION. This work is the construction of one or more courses of a mixture of aggregate and bituminous material, mixed and processed on the roadway.

406.02 MATERIALS.

406.02.1 Bituminous Material. Furnish the type and grade of bituminous material specified in the Contract meeting the requirements of Sections 402 and 702.

406.02.2 Aggregate. Furnish the aggregate specified in the Contract meeting the applicable Section 701 requirements.

406.03 CONSTRUCTION REQUIREMENTS.

406.03.1 Prosecution of Work. Furnish the resources to complete at least one half mile (0.80 km) of continuous road mix bituminous pavement each day on projects 5 miles (8 km) or more in length.

On projects less than 5 miles (8 km) in length, complete the work within 10 working days.

Do not open up more than 2 miles (3.2 km) of work to any one phase of construction. Do not perform bituminous construction on more than 3 contiguous miles (4.8 km) of roadway.

406.03.2 Equipment.

A. Bituminous Distributor. Maintain on the project at least one bituminous distributor meeting Subsection 410.03.1(A) requirements.

B. Motor Graders. Use motor graders meeting Subsection 210.03.2 requirements.

C. Road Plants and Machines. Use equipment capable of producing the specified work.

Do not damage the existing surface. Remove any equipment that damages the roadway or does not produce the specified work.

D. Stationary Plants. A stationary plant may be used for mixing the new aggregate and bituminous material, if approved. Mixing and aeration of the material, if not completed in the plant, must be completed on the roadway meeting these specifications.

The Project Manager may permit mixing, spreading, and compacting the materials under Section 401.

E. Rollers. Furnish rollers meeting Subsection 210.03.4 requirements.

406.03.3 Limitations and Conditions.

A. Weather, Season, and Time. Perform road mix bituminous paving when the roadway surface is dry, the temperature is above 50 °F (10 °C) and during daylight hours.

B. Stockpiling. Windrow stockpile the aggregate on the roadway only for mixing operations that can be completed without interruption.

The Contractor may produce and stockpile the aggregate off the roadway at its own expense. Stockpile aggregate meeting Subsection 303.03 requirements.

C. Moisture Content. Do not allow the aggregate moisture content to exceed 3% by weight before applying the bituminous material.

When emulsified asphalt is specified, the maximum moisture content of the aggregate is specified in the Contract or directed by the Engineer.

Cease work during periods of rain and immediately windrow the material. Maintain drainage away from the windrows.

Dry the treated material and the base before resuming work. Mixing is permitted to aid drying. Place the bituminized mixture on the roadbed, once approved by the Project Manager. Do not place the mixture if the moisture content in the upper 6-inches (150 mm) of the base exceeds 3½% .

406.03.4 Traffic Control and Protection of Highway Structures. Place traffic control meeting the Contract requirements and the approved traffic control plan. Protect highway structures meeting the requirements of Subsection 410.03.9.

Park all equipment at least 30 feet (9.2 m) from the edge of the traveled way or place it a minimum 10 feet (3 m) behind guardrail when work is suspended and traffic has use of the roadway.

Leave all material in a uniform windrow without interfering with traffic, signed and delineated as specified or directed. Leave the roadway in a safe condition for the traveling public.

406.03.5 Prime or Tack Coat. Apply the prime or tack coat under Section 407.

406.03.6 Aggregate. Where aggregate is recycled from the existing roadway, scarify the surface to produce the material quantity required for the compacted thickness of bituminous surfacing shown in the plans. Do not disturb the base surface below the depth required to produce the necessary quantity of material. Break all clods and windrow the loose material. Shape and compact the base surface to the typical section.

Uniformly mix recycled and new material before applying the bituminous material.

When only new aggregate is to be used, shape and compact the existing roadway surface to the specified sections. Apply prime coat as specified before placing the new aggregate. Uniformly windrow the new aggregate on one side of the roadway. Make the windrow uniform in size throughout its entire length.

406.03.7 Application of Bituminous Material. Apply bituminous material at the rates, temperature, and manner specified. Assure all aggregate is uniformly coated with bituminous material.

When applying bituminous material with distributors or mixing machines equipped with applicators, spread the windrowed aggregate in successive layers at least 8 feet (2.4 m) wide. Uniformly apply the bituminous material to the full width of each layer. Make at least 3 layers of aggregate and bituminous material.

406.03.8 Processing. Blade all surfacing material into a windrow after the last application of bituminous material and partial mixing. Move the windrow from side to side of the roadway a minimum of 8 times working the aggregate until it is uniformly coated with bituminous material and is aerated for spreading and compacting.

A move is moving the entire mass from one edge of the roadway section to the other. If necessary, make additional moves to produce the desired mix uniformity. Prevent segregation of material or loss of mineral filler from the mixture.

Once mixing is completed, the Project Manager will inspect the mixture for acceptance. If excessive bituminous material was applied, add additional aggregate to the mixture and thoroughly blend by blade mixing. If more bituminous material is required, spread the mixed material needing more bitumen on one side of the roadway, add the required additional bituminous material and resume mixing until the mix is uniform.

Remove oversize material in the mixture during mixing.

406.03.9 Spreading and Compacting. Spread the mixed material to the specified thickness using a pneumatic-tired motor grader.

Compact the material with a self-propelled pneumatic-tired roller that provides at least 60 psi (414 kPa) pressure on the mat.

Continue rolling until the mat is uniformly and thoroughly compacted leaving no roller marks. Begin rolling on the low side of the paving lane and roll lengthwise and parallel to the high side, each pass overlapping the preceding pass by at least 6-inches (150 mm).

Final roll using a metal-wheeled roller operated at speeds between 3 (5 kph) and 8 (13 kph) miles per hour. Correct roller speed if the roller displaces the material.

Do not use kerosene or diesel fuel to prevent pickup on the finishing roller. Correct all defects before opening the road to traffic.

The finished surface must be free of ruts, depressions or other surface defects exceeding 3/8-inch (10 mm), as measured with a 10 foot (3 m) straightedge paralleling the roadway center. Make corrections by scarifying and relaying the mixture at Contractor expense.

406.03.10 Seal Coat. Apply seal coat when specified under Section 409.

406.04 METHOD OF MEASUREMENT.

406.04.1 Bituminous Material. Bituminous material is measured by the gallon (liter) or ton (metric ton) under Subsection 402.04.

406.04.2 Aggregate. New or additional aggregate for the bituminous surfacing course and the shoulders is measured by the cubic yard (cubic meter) or ton (metric ton) under Subsection 301.04.1.

406.04.3 Processing. Processing of all bituminous surfacing materials is measured by the mile (km) along the centerline of the roadway or by the square yard (square meter).

406.04.4 Rolling. Rolling is incidental to and included in payment for other items of the work.

406.04.5 VACANT.

406.05 BASIS OF PAYMENT. Payment for the completed and accepted quantities is made under the following:

Pay Item	Pay Unit
Bituminous Material	Gallon (liter) or Ton (metric ton)
Aggregate	Cubic Yard (cubic meter) or Ton (metric ton)
Processing	Mile (kilometer) or Square Yard (square meter)

Payment at the contract unit price is full compensation for all resources necessary to complete the item of work under the Contract.

When emulsified asphalt is specified, the cost of additional water required during mixing is included in the unit price for emulsified asphalt.

The grade of bituminous material may be changed one step by the Engineer with no adjustment in price.

When stationary plants are used for mixing, the weight of bituminous materials and mixing water are deducted from the total mix weight.